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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,392	03/16/2007	Maysam Ghovanloo	UOM0327PUSA	1352
22045	7590	12/31/2009		
BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			EXAMINER BURD, KEVIN MICHAEL	
			ART UNIT	PAPER NUMBER
			2611	
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			12/31/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/597,392	Applicant(s) GHOVANLOO ET AL.	
	Examiner Kevin M. Burd	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. This office action, in response to the amendment filed 10/30/2009, is a final office action.

Response to Arguments

2 Applicant's arguments filed 10/30/2009 have been fully considered but they are not persuasive.

Applicant states the demodulator of Thompson is not a digital demodulator. The examiner disagrees. Paragraph 0057 discloses the FSK demodulator is a digital demodulator.

Applicant describes a portion of Tajima in the remarks. Applicant states it is clear f_1 is not twice f_2 . However, the recited limitation states the frequency is approximately twice the other carrier frequency. Tajima discloses the frequency is approximately twice that of the second carrier frequency. The claims (and specification) are silent as to what the deviation from twice the approximately language is supposed to encompass. Tajima discloses a carrier at near 11 MHZ and a second carrier at near 2.8MHZ. The first carrier will be approximately twice the second carrier.

Applicant describes a portion of Katayama in the remarks. Applicant states the subject matter of the reference is well known and has several disadvantages.

Applicant describes a portion of Young in the remarks. Applicant states Young's serial data bit streams nor the clock have a constant frequency. However, Young discloses the clock pulse source shown in figure 15 is constant at 48 KHz.

For these reasons and the reasons stated in the previous office action, the rejection of the claims are maintained and stated below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 9-11 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Thompson (US 2002/0045920).

Regarding claims 1 and 11, Thompson discloses a high data rate receiver for an FSK data transmission system (paragraph 0018). The receiver comprises a digital demodulator for demodulating the received signals having a data rate. The digital demodulator generates a serial data bit stream and a synchronized clock signal (paragraph 0057). The received signal is modulated on a carrier. It is inherent in FSK systems that the FSK technique provides modulation that merges binary data into a carrier and creates two changes in frequency, one that represents a logic "1" and another that represents a logic '0'.

Regarding claims 9 and 19, Thompson discloses the system is a magnetically powered wireless system (paragraphs 0015 and 0016).

Regarding claim 10, Thompson discloses the receiver is a wireless biomedical implant (figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-5 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (US 2002/0045920) in view of Tajima (US 2001/0002924).

Regarding claims 2-5 and 12-15, Thompson discloses the receiver in an FSK system as stated above. Thompson does not disclose the data rate is greater than one Mbps, the data rate approximates the carrier frequency 2.3 MHz and one of the carrier frequencies is approximately twice the other carrier frequency. Tajima discloses a receiver in an FSK system that receives data at 1 Mbps (paragraph 0031), the data rate approximates the carrier frequency 2.3 MHz (figure 3) and one of the carrier frequencies is approximately twice the other carrier frequency (figure 3). It would have been obvious for one of ordinary skill in the art at the time of the invention to use high data rates as taught by Tajima in all FSK systems. The higher the data rate, the more information can be communicated in a given period of time.

5. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (US 2002/0045920) in view of Katayama et al (US 2001/0021234).

Regarding claims 6 and 16, Thompson discloses the receiver in a FSK system as described above. Thompson does not disclose the demodulator of the receiver

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detecting an error and outputting an error signal. Katayama discloses a FSK receiver that detects an error in the carrier signal and outputting an error signal (paragraph 0015 and 0018). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the teachings of Katayama into the receiver of Thompson. The demodulator is then capable of deciding whether or not a desired signal is present at the receiver or if the received signal contains too many errors to be demodulated properly (paragraphs 0017 and 0018).

6. Claims 7, 8, 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (US 2002/0045920) in view of Young (US 4,066,841).

Regarding claims 7, 8, 17 and 18, Thompson discloses the receiver in an FSK system as described above. Thompson does not disclose the demodulator measures the period of the positive half cycle of the FSK carrier to obtain a series of pulses. Young discloses the time duration of each half cycle of the received data wave is measured by counting clock pulses of a known frequency, the count corresponding to each received half cycle being compared with a threshold count stored in the receiver. If the received count is less than the threshold count, the received data symbol corresponds to the higher keying frequency. If it is greater than the threshold count the data symbol corresponds to the lower keying frequency (column 5, line 65 to column 6, line 6 and figure 4). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the method of recovering the transmitted data of

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Young in the receiver of Thompson. Young allows for a simple way of determining which symbol corresponds to which carrier frequency.

Regarding claim 20, Thompson discloses a high data rate receiver for an FSK data transmission system (paragraph 0018). The receiver comprises a digital demodulator for demodulating the received signals having a data rate. The digital demodulator generates a serial data bit stream and a synchronized clock signal (paragraph 0057). The received signal is modulated on a carrier. It is inherent in FSK systems that the FSK technique provides modulation that merges binary data into a carrier and creates two changes in frequency, one that represents a logic "1" and another that represents a logic '0'. Thompson does not disclose the demodulator measures the period of the positive half cycle of the FSK carrier to obtain a series of pulses. Young discloses the time duration of each half cycle of the received data wave is measured by counting clock pulses of a known frequency, the count corresponding to each received half cycle being compared with a threshold count stored in the receiver. If the received count is less than the threshold count, the received data symbol corresponds to the higher keying frequency. If it is greater than the threshold count the data symbol corresponds to the lower keying frequency (column 5, line 65 to column 6, line 6 and figure 4). It would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the method of recovering the transmitted data of Young in the receiver of Thompson. Young allows for a simple way of determining which symbol corresponds to which carrier frequency.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin M. Burd/
Primary Examiner, Art Unit 2611
12/29/2009